APPENDIX V

VIBRACORE LOGS

COASTAL PLANNING & ENGINEERING, INC.

Coastal Planning & Engineering
2481 N.W. Boca Raton Blvd.
Boca Raton, Florida 33431
Phone # 1-561-391-8102

Legend for Geotechnical Data

(SP), (SM), etc. Refers to the Army Corps of Engineers Unified Soils Classification System. Classification of materials on the core logs is initially based on visual field examinations. Final classifications are based on laboratory sieve analyses and are identified on the core logs.

Silty, shelly, etc. The indicated sediment type is present. The estimated percentage indicated by the Unified Soil Classification System descriptive terms selected to describe the sediment that is shown in table 3.

Definition of descriptive terms

Clean	Free of silt or clay
Very	To a high degree
Slightly	To a small degree
Isolated	Limited occurrence
Occasional	Infrequently present
Tight	Dense compacted

Grain size terms

Cobbles – above 3”
Gravel – 3” sieve to # 4 sieve
- Coarse – 3” sieve to ¾” sieve
- Fine – ¾” sieve to # 4 sieve

Sand – # 4 sieve to # 200 sieve
- Coarse - # 4 sieve to # 10 sieve
- Medium - # 10 sieve to # 40 sieve
- Fine - # 40 sieve to # 200 sieve

Fine – (silt or clay) < # 200 sieve

Proportional definition of descriptive terms

Descriptive Term	Range of Proportions
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %
Coarse to fine	All sizes
Coarse to medium	10 % fine
Medium to fine	10 % coarse
Coarse	10 % medium and fine
Medium	10 % coarse and fine
Fine	10 % coarse and medium

Note: Information is after ACOE Atlantic Division Manual # 1110-1-1 titled *Engineering and Design Geotechnical Manual for Surface and Subsurface Investigations*

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GW		Well graded gravels or gravel-sand mixtures, little or no fines	ML	 Inorganic silts and very fine sands, rock flour, sandy silts or clayey silts with slight plasticity
GP		Poorly graded gravels or gravel-sand mixtures, w/ little or no fines	MH	 Inorganic silts, micaceous or diatomaceous fine sandy or silty soild, elastic silts
GM		Silty gravels, gravel-sand-silt mixtures	OL	 Organic silts and organic silt-clays of low plasticity
GC		Clayey gravels, gravel-sand-clay mixtures	OH	 Organic clays of medium to high plasticity, organic silts
SW		Well graded sands or gravelly sands, little or no fines	CL	 Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
SP		Poorly graded sands or gravelly sands, little or no fines	CH	 Inorganic clays of high plasticity, fat clays
SM		Silty sands, sand-silt mixtures	PT	 Peat and other highly organic soils
SC		Clayey sands, sand-clay mixtures	SP-SM	 Poorly-graded silty sand
SW-SM		Well-graded silty sand	SM-SC	 Silty clayey sand
GW-GM		Well-graded silty gravel	ML-CL	 Inorganic silty lean clay
GM-GC		Clayey silty gravel		

Note: Information is after ACOE Atlantic Division Manual # 1110-1-1 titled *Engineering and Design Geotechnical Manual for Surface and Subsurface Investigations*

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2567910 Y=331396

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-01

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 10.0 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE Started: 7/18/02 06:30 Completed:

17. ELEVATION TOP OF HOLE: -1.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 87%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1	0					
	1		SAND, fine-med grained, quartz, trace silt, some shell hash, trace shell fragments, gray (5Y-6/1), (SW).		1	Sample #1, Depth = 1.0' Mean (mm): 0.26, Phi Sorting: 0.86 Silt: 1.20% (SW)
-3.2	2					
	3		SAND, fine-med grained, quartz, trace silt, trace shell hash, pockets of dark gray sand (5Y-4/1), light gray (5Y-7/1), (SP).		2	Sample #2, Depth = 3.0' Mean (mm): 0.21, Phi Sorting: 0.51 Silt: 1.59% (SP)
-4.8	4					
	5					
	6		fine-med grained, quartz, trace silt, little shell hash, trace shell fragments, wood @ 5.9' (0.5"x0.5"), light gray (5Y-7/1), (SP).		3	Sample #3, Depth = 6.0' Mean (mm): 0.24, Phi Sorting: 0.82 Silt: 1.62% (SP)
	7					
	8					
-9.6	9					
			SHELLY SAND, whole shells up to 1.5" long, trace silt, sand component fine-med quartz, gray (5Y-6/1), (SW).			
-11	10		No Recovery			
			End of Boring			
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21					
	22					
	23					
	24					

Note:

1) Soils are field visually classified in accordance with the Unified Soil Classification System.

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2567910 Y=331396

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-01A

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 13.0 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES:

15. ELEVATION GROUND WATER:

16. DATE HOLE Started: 7/18/02 06:30 Completed:

17. ELEVATION TOP OF HOLE: -1.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 76%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1	0					
	1					
	2					
	3					
	4		JET			
	5					
	6					
	7					
-9	8					
-9.7			SHELLY SAND, whole shells up to 1.5" long, trace silt, sand component fine-med quartz, wood @ 9.3' (1"x1"), gray (5Y-6/1), (SW).		1	Sample #1, Depth = 8.3' Mean (mm): 0.64, Phi Sorting: 2.32 Silt: 0.91% (SW)
	9					
	10		SAND, fine-med grained, quartz, trace silt, some shell hash, trace shell fragments, gray (5Y-6/1), (SW).		1s#1	
-12.8	11					
	12		No Recovery			
-14	13		End of Boring			
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION: SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2567910 Y=331396

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-01B

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: -19.3 FT

10. SIZE AND TYPE OF BIT: 5.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE Started: 7/18/02 06:30 Completed:

17. ELEVATION TOP OF HOLE: -1.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 82%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1	0					
	1					
	2					
	3					
	4					
	5					
	6		JET			
	7					
	8					
	9					
	10					
	11					
-13	12					
	13					
	14		SAND, fine-med grained, quartz, trace silt, little shell hash, whole shell @ 14.4' (1.5"x1.5"), light gray (5Y-7/1), (SP).		1s#3	
	15					
	16					
-18.4	17					
-19	18		SHELLY SAND, shell hash, 0.1-0.15" shell fragments, 2"-3" oyster shells at base, sand component is medium quartz, olive gray (5Y-5/2), (SW).		1	Sample #1, Depth = 17.7' Mean (mm): 0.64, Phi Sorting: 1.56 Silt: 0.57% (SW)
-20.3	19		No Recovery			
	20		End of Boring			
	21					
	22					
	23					
	24					

Note:

1) Soils are field visually classified in accordance with the Unified Soil Classification System.

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2568830 Y=330212

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-02

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 12.0 FT

10. SIZE AND TYPE OF BIT: 5.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE Started: 7/19/02 07:00 Completed:

17. ELEVATION TOP OF HOLE: -1.2 FT

18. TOTAL CORE RECOVERY FOR BORING: 91%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1.2	0					
	1		SAND, fine-med grained, quartz, trace silt, some shell hash, little shell fragments, lower half contains pockets of dark gray sand (5Y-5/2), olive gray (5Y-6/2), (SW).		1	Sample #1, Depth = 2.0' Mean (mm): 0.28, Phi Sorting: 0.88 Silt: 1.19% (SW)
	2					
	3					
-5	4					
-5.9	5		SAND, fine-med grained, quartz, trace silt, little shell hash, trace shell fragments, pockets of dark gray sand, gray (5Y-6/1), (SP).		2	Sample #2, Depth = 4.3' Mean (mm): 0.24, Phi Sorting: 0.56 Silt: 1.21% (SP)
	6		SAND, fine-med grained, quartz, trace silt, some shell hash, little shell fragments, whole shell @ 5.6' (2"x1") and oyster shell @ 6.0' (3"x2"), gray (5Y-6/1), (SW).		3	Sample #3, Depth = 6.0' Mean (mm): 0.37, Phi Sorting: 1.22 Silt: 1.21% (SW)
-8.2	7					
	8		SAND, fine-med grained, quartz, trace silt, little shell hash, trace shell fragments, pockets of dark gray sand, gray (5Y-6/1), (SP).		4	Sample #4, Depth = 9.0' Mean (mm): 0.25, Phi Sorting: 0.55 Silt: 1.24% (SP)
	9					
	10					
-12.1	11		No Recovery			
-13.2	12		End of Boring			
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET
2. LOCATION (Coordinates or Station): X=2568830 Y=330212
3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.
4. HOLE NO. (As shown on drawing title and file number): BIVC-02-02A
5. NAME OF DRILLER: Jerry Sexton
6. DIRECTION OF HOLE: VERTICAL
7. THICKNESS OF BURDEN: 0.0 FT
8. DEPTH DRILLED INTO ROCK: N/A
9. TOTAL DEPTH OF HOLE: 18.0 FT
10. SIZE AND TYPE OF BIT: 3.0"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.
13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0
14. TOTAL NO. OF CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: Started 7/19/02 07:00 Completed:
17. ELEVATION TOP OF HOLE: -1.2 FT
18. TOTAL CORE RECOVERY FOR BORING: 83%
19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1.2	0					
	1					
	2					
	3					
	4					
	5		JET			
	6					
	7					
	8					
	9					
-11.7	10					
	11					
	12					
	13		SAND, fine-med grained, quartz, trace silt, little shell hash, trace shell fragments, gray (5y-6/1), (SP).		2s#4	
	14					
	15					
	16					
-17.9	17		No Recovery			
-19.2	18		End of Boring			
	19					
	20					
	21		Note:			
	22		1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2568615 Y=329401

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-03

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 11.3 FT

10. SIZE AND TYPE OF BIT: 5.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE Started / Completed: 7/20/02 07:30

17. ELEVATION TOP OF HOLE: -1.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 100%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1	0					
			SAND, fine-med grained, quartz, trace silt, some shell hash, trace shell fragments, gray (5Y-6/1), (SW).		1	Sample #1, Depth = 2.5' Mean (mm): 0.34, Phi Sorting: 0.88 Silt: 1.03% (SW)
-5.8	5		fine-med grained, quartz, trace silt, little shell hash, trace shell fragments, whole shell @ 6.8' (0.5"x1"), gray (5Y-6/1), (SW).		2	Sample #2, Depth = 6.0' Mean (mm): 0.31, Phi Sorting: 0.98 Silt: 1.36% (SW)
-8.3	7		SHELLY SAND, sand component is medium quartz sand, some shell fragments up to 2" long, whole shell @ 7.4' (1"x1") and @ 8.3' (1"x2"), olive gray (5Y-5/2), (SW).		3	Sample #3, Depth = 8.0' Mean (mm): 1.34, Phi Sorting: 2.22 Silt: 0.73% (SW)
-10	9				4	Sample #4, Depth = 9.5' Mean (mm): 0.45, Phi Sorting: 0.93 Silt: 0.8% (SW)
-11.7	10		SAND, med grained, quartz, some shell hash, trace shell fragments, gray (5Y-5/1), (SW).			
	11		End of Boring			

Note:

1) Soils are field visually classified in accordance with the Unified Soil Classification System.

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2568615 Y=329401

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-03A

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 19.5 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE Started: 7/20/02 07:30 Completed:

17. ELEVATION TOP OF HOLE: -1.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 69%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-1	0					
	1		JET			
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
-10.7						
-11.3	10		GAP			
			SAND, fine-med grained, quartz, trace silt, little shell hash, light gray (5y-7/1), (SP)		1	Sample #1, Depth = 10.7' Mean (mm): 0.21, Phi Sorting: 0.49 Silt: 1.59% (SP)
-12.3	11					
	12		SAND, fine-med grained, quartz, trace silt, some shell hash, gray (5Y-6/1), (SW).		3s#1	
-14	13					
	14		SHELLY SAND, shell hash, shell fragments, whole oyster shells, sand component is fine-med quartz, olive gray (5Y-5/2), (SW).		3s#3	
	15					
	16					
-18.1	17					
	18		No Recovery			
-20.5	19					
	20		End of Boring			
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2569112 Y=327518

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-04

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 7.4 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES:

15. ELEVATION GROUND WATER:

16. DATE HOLE Started: 7/17/02 09:30 Completed:

17. ELEVATION TOP OF HOLE: -11.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 59%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-11	0					
	1		SAND, fine-med grained, quartz, little shell hash, gray (5Y-6/1), (SP).		1	Sample #1, Depth = 1.5' Mean (mm): 0.26, Phi Sorting: 0.84 Silt: 1.21% (SP)
-13.8	2					
	3		SAND, med grained, quartz, some shell hash, trace shell fragments, olive gray (5Y-5/2), (SW).		2	Sample #2, Depth = 3.5' Mean (mm): 0.38, Phi Sorting: 1.52 Silt: 1.28% (SW)
-15.4	4					
	5		No Recovery			
	6					
-18.4	7					
	8		End of Boring			
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2569112 Y=327518

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-04A

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 8.0 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE Started: 7/17/02 09:30 Completed:

17. ELEVATION TOP OF HOLE: -11.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 75%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-11	0					
	1		JET			
	2					
	3					
-15	4					
	5		SAND, fine-med grained, quartz, trace silt, some shell hash, trace shell fragments, gray (5Y-6/1), (SW).		1	Sample #1, Depth = 4.7' Mean (mm): 0.23, Phi Sorting: 1.10 Silt: 1.11% (SW)
-16.6	6		SHELLY SAND, shell hash, sand component is med grained quartz, some shell fragments, gray (5Y-5/1), (SW).		2	Sample #2, Depth = 6.4' Mean (mm): 0.52, Phi Sorting: 1.64 Silt: 0.96% (SW)
-18	7		No Recovery			
-19	8		End of Boring			
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2569112 Y=327518

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-04B

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 11.4 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES:

15. ELEVATION GROUND WATER:

16. DATE HOLE Started: 7/17/02 09:30 Completed:

17. ELEVATION TOP OF HOLE: -11.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 45%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-11	0					
	1					
	2					
	3		JET			
	4					
	5					
	6					
-18	7					
-18.5			SAND, fine-med grained, quartz, trace silt, some shell hash, trace shell fragments, gray (5Y-6/1), (SW).		4s#2	Sample #1, Depth = 7.9' Mean (mm): 0.87, Phi Sorting: 2.12 Silt: 0.93% (SW)
	8				1	
-20	9		SHELLY SAND, shell hash, shell fragments, sand component is fine-med quartz, whole oyster shells up to 2", gray (5Y-5/1), (SW).			
	10		No Recovery			
-22.4	11		End of Boring			
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT: BOGUE INLET

2. LOCATION (Coordinates or Station): X=2569519 Y=326895

3. DRILLING AGENCY: ATHENA TECHNOLOGIES, INC.

4. HOLE NO. (As shown on drawing title and file number): BIVC-02-05

5. NAME OF DRILLER: Jerry Sexton

6. DIRECTION OF HOLE: VERTICAL

7. THICKNESS OF BURDEN: 0.0 FT

8. DEPTH DRILLED INTO ROCK: N/A

9. TOTAL DEPTH OF HOLE: 11.0 FT

10. SIZE AND TYPE OF BIT: 3.0"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW

12. MANUFACTURER'S DESIGNATION OF DRILL: ATHENA TECHNOLOGIES, INC.

13. TOT NO. OF OVERBURDEN SAMPLES TAKEN: Disturbed: 0 Undisturbed: 0

14. TOTAL NO. OF CORE BOXES:

15. ELEVATION GROUND WATER:

16. DATE HOLE Started: 7/17/02 07:50 Completed:

17. ELEVATION TOP OF HOLE: -18.0 FT

18. TOTAL CORE RECOVERY FOR BORING: 80%

19. SIGNATURE OF GEOLOGIST: JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18	0					
	1					
	2					
	3					
	4		SAND, fine grained, quartz, trace silt, little shell hash, trace shell fragments, gray (5Y-6/1), (SP).		1	Sample #1, Depth = 5.0' Mean (mm): 0.15 Phi Sorting: 0.57 Silt: 1.88% (SP)
	5					
	6					
	7					
-25.5	8		SAND, fine-med grained, quartz, some shell hash, little shell fragments up to 1", whole shells @ 8.1' (1"x1") and @ 8.4' (1"x1"), gray (5Y-6/1), (SW).		2	Sample #2, Depth = 8.3' Mean (mm): 0.65, Phi Sorting: 1.55 Silt: 1.20% (SW)
-26.8	9					
	10		No Recovery			
-29	11		End of Boring			
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	22					
	23					
	24					